USB CAMERA GUIDE

LIBERTY
AV SOLUTIONS

ONE SIZE DOESN'T FIT ALL

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When it comes to collaboration, there are separate buckets that almost any space will likely fall into: i.e. the home office, huddle room, conference room, and event/teaching spaces. Luckily, within each of these buckets, Liberty AV offers various solutions, such as a USB camera used for business meetings, training webinars, video podcasts, or chatting with your family.

Choosing the right camera matters. To get a basic grasp of how to choose the right collaboration camera, without getting bogged down by all the specifications, we've broken down a few topics to consider and how you might go about integrating cameras into your solution.

Around the turn of the century, manufacturers began integrating webcams directly into laptops and desktop screens. Individuals started using these cameras for 1:1 conferencing, but they are still very limiting with the current build quality and overall feature sets.

When there is the need to integrate professional-grade products into cloud-based conferencing solutions, it's best to standardize system design across the company. Being able to choose the right products will make streamlining a company's approach to collaboration much easier. Liberty AV can help take out the guesswork often associated with interoperability, control, and quality.
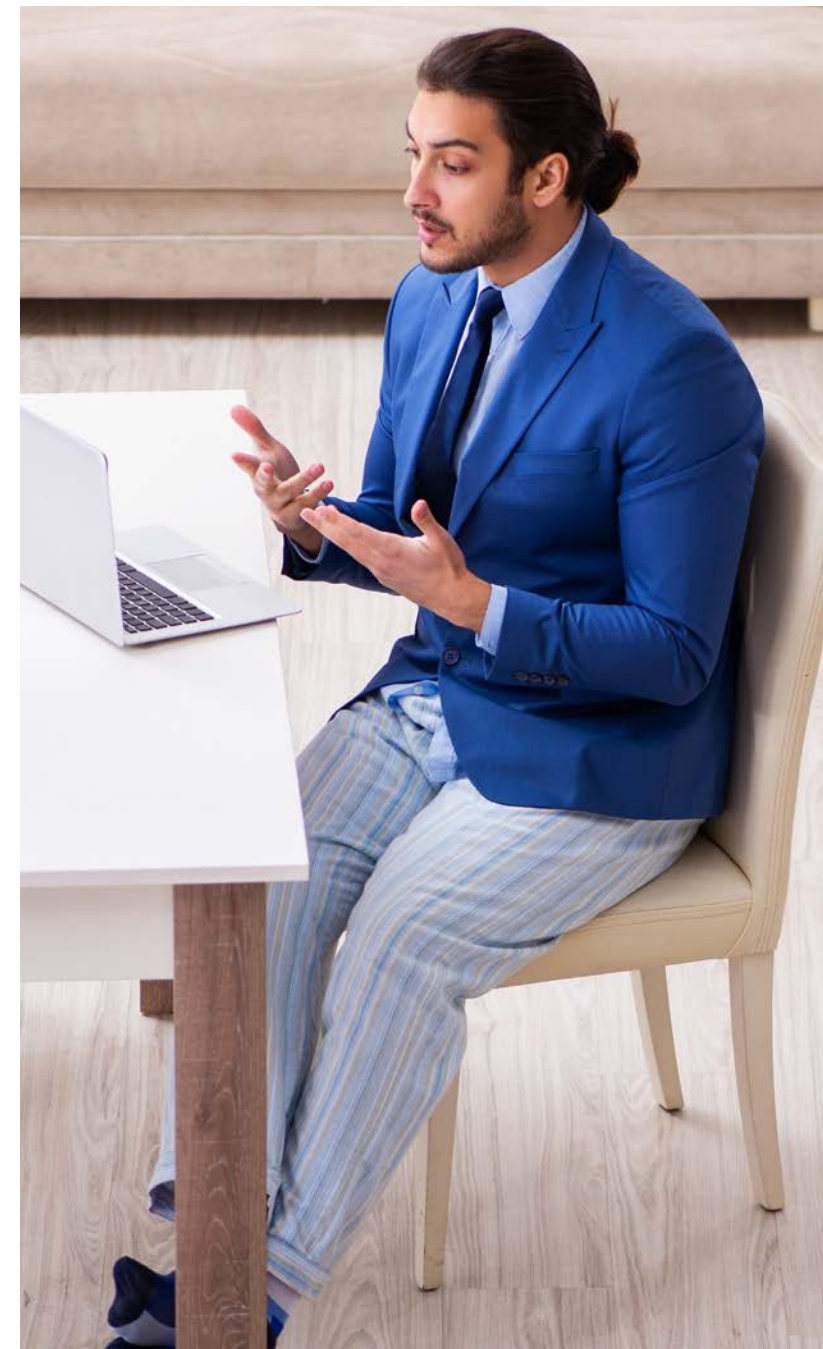
IT'S ALL ABOUT PERSPECTIVE

One of the most important considerations when choosing collaboration cameras for your home or business is determining what you want the meeting participants to see. You must begin by knowing the perspective other meeting participants will see based on what the camera captures.

The best way to determine which camera will capture the area you are interested in displaying is to look for the camera's field of view. Every camera has a different field of view and knowing what that means will help in your overall decision making.

We've all seen people crowded around a laptop camera just to be in the shot. Likewise, when the other meeting participants realize there is more than one person in the meeting, the camera shot just doesn't pick everyone up.

Or what about the work-from-home movement where some people wear pajamas below the belt during video conference calls? It's all about perspective. In allowing people to see what YOU want, you must know what you are able to show.

WHAT IS THE RIGHT CAMERA TO CAPTURE THE SHOT YOU WANT?

The teacher will need a camera with at least 80 degrees or will need to place the camera further away to show the area she will be notating on.

The camera field of view (FOV) is also called the viewing angle. This is what the camera can capture or see and it is often measured in degrees. In the example above, a camera with a FOV of 70 degrees may not capture what you imagined it would.

It's best to think of the field of view as a cone of vision. The wider the field of view, the larger the viewing cone. This has several benefits and drawbacks in the world of cameras.

Cameras often use lenses that balance field of view and focal length (the distance the camera can see). The shorter the field of view, the longer the focal length. That means that if your camera has a smaller field of view, it should be able to see things further away. You can see this effect when you look through a telescope. Hence you will see "tele" within the specifications of a PTZ camera. On the other hand, the wider the field of view, the shorter distance your camera is going to cover.


For example, one of Liberty AV's developed products, DL-USB-PTZ10, a high-definition USB PTZ camera is designed to offer a field of view with a range between 8 to 66 degrees. The high-definition camera is compact enough to be incorporated in any conference room, yet will seamlessly capture all participants without worry, even for headshots. With a 10-times optical zoom, USB 2.0 support and full 1080p video capabilities, the Liberty AV DL-USB-PTZ10 high-definition camera can be incorporated into cloud conferencing solutions such as Zoom and Teams for a more comprehensive system across the company. Below are a few examples to help you choose the appropriate camera for your space.

Shown between examples, the DL-USB-PTZ10 camera is mounted in the same location. Using an optical zoom lens, the camera provides you with different shots without losing definition.
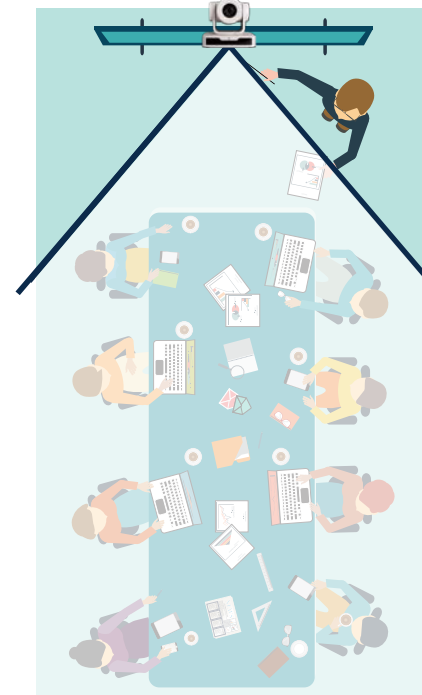
Example 1: wide shot using the DL-USB-PTZ10.
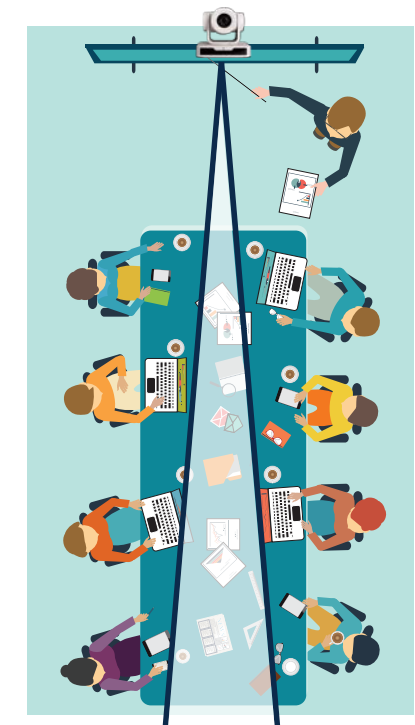
Example 2: tele shot using the DL-USB-PTZ10 for capturing close-up shots.

HOW DO YOU POSITION YOUR CAMERA FOR THE BEST SHOT?

Choosing the right FOV all depends on the purpose of the camera. Wide-angle cameras which are usually above 100+ degrees will capture a much wider area. This means you provide as much detail as a telephoto or super telephoto lens, but you're able to capture a wider area of space while still getting detail.

Once you've selected the FOV, there are a few other things to keep in mind, including camera height and room positioning.

Liberty's PTZ camera is mounted along the back wall to capture the presenter for those joining in from the far side allowing for a way to connect as if they were in the space.

CAMERA HEIGHT

Generally, there are two heights to consider for your cameras. The first one is capturing the seated participants (the audience). The camera lens should be placed at seated eye level, which falls around +/- 48" above the finished floor. The second is capturing the presenter. Here you want to do some homework to make sure composition is considered. A quick way to accomplish this is mounting the lens at standing eye height, usually +/- 55" above the finished floor.
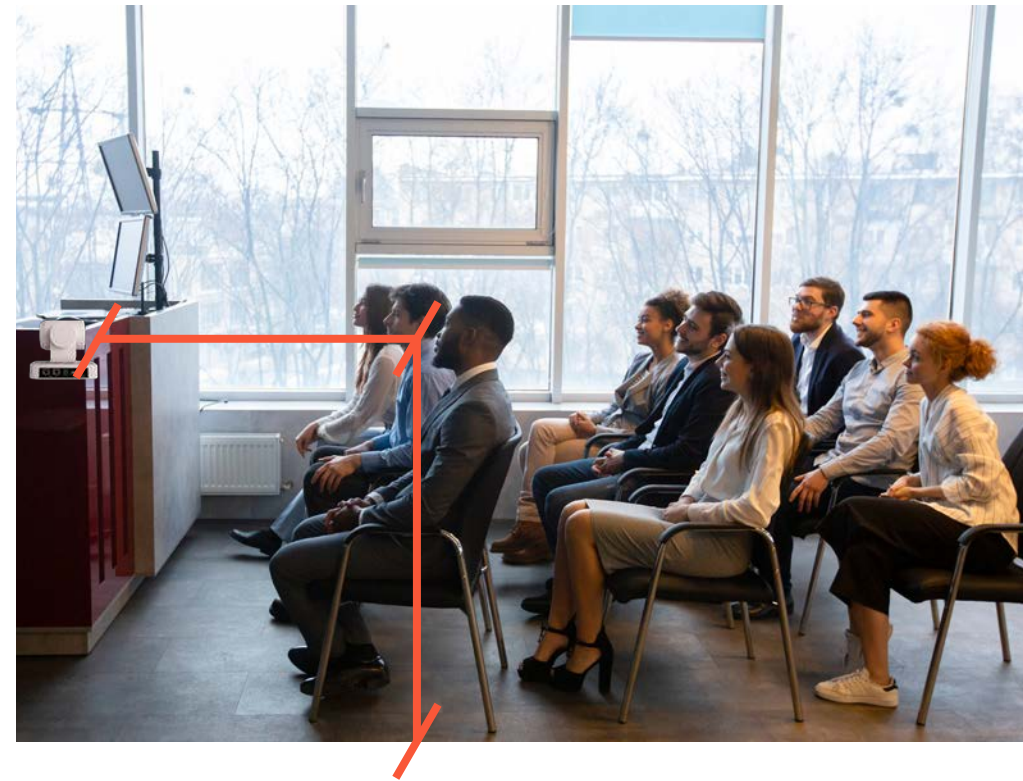
CAMERA HEIGHT

Liberty's PTZ camera is mounted along the front wall to capture the audience for those joining in from the far side such as a teacher or for group collaboration.

Camera angled too low

Camera angled too high

CAMERA ANGLE

Focus your efforts on who you want to capture by remembering it's all about having the lens level to the eye height of who you are capturing. We do understand there might be situations where that might not be possible. In this case we recommend mounting the camera a bit higher rather than lower.

Example of one meeting taking place at two different locations

ROOM POSITIONING

Another thing you need to consider, and is arguably more important than the first, is — if you put your camera in the wrong place, the height doesn't matter. For example, if you put your camera up high in the middle of the wall, you will replicate what some consider the "god" view.

The best place to put a camera is in front of what you are wanting the meeting participants to see. Remember, the camera lens is the eyes for all meeting participants. To provide the best experience possible, placing the camera at the right height and position is key.

Knowing the location you want to reference is key in deploying a successful experience. Video conferencing is filled with all sorts of terms. There are two to remember: the "Near End" is where you are and the "Far End" is where the other people are. This is user-subjective, and can also be described as My Near End, and Your Near End. This is important to understand when you are physically mounting and configuring the solution.

KEEP IT SIMPLE

Every room, space, and home office is different. That makes finding the best angle for your camera's field of view a bit of a personal quest. You must put it up and test it to see what exact position, height, and angle works best for your application.

The more versatile your camera is, the better chance you have of working it into your design. You can even use it in conjunction with our TeamUp+ series to enhance your collaboration space by providing a seamless "Bring your own meeting" environment that delivers a true connect and collaborate experience!

LIBERTY AV'S CAMERA LINEUP

TEAMUP+ USB CAMERAS

Comparison table

MODEL	CAM90	CAM120	PTZ10	PTZ20
Suggested Spaces	Home Office, Huddle Room	Huddle Room, Capturing Students, fixed shots that need to cover a wider shot	Medium to Large Conference Rooms	Training Rooms, House of Worship, Key areas where the presenter needs be in the shot
Field of View	90	120	8.3 (tele) to 66 (wide)	6.3 (tele) to 72.5 (wide)
Resolution	1920x1080p@30FPS	1920x1080p@30FPS	1920x1080p@30FPS	
USB Interface	USB 2.0	USB 2.0	USB 2.0	USB 3.0, 2.0
UVC	YES	YES	YES	YES
HDMI	no	no	no	YES
3G-SDI	no	no	no	YES
NDI	no	no	no	no
IP-Streaming	no	no	no	YES
RS-232	no	no	YES	YES
RS-485	no	no	YES	YES
RS-422	no	no	no	YES
# of Presets	no	no	255 (10 on Remote)	255 (10 on Remote)
Wide Dynamic Range	no	no	no	YES
3D Noise Cancelation	no	no	no	YES
Backlight Compensation	no	no	no	Backlight Compensation
Power	USB	USB	DC 12V or *USB	DC 12V or PoE
Wall Mount	*Optional	*Optional	Included	Included
Tripod Thread	YES	YES	YES	YES
Ceiling Mount	no	no	*Optional	*Optional
Built In Gyro	no	no	no	YES

DL-WFH-CAM90

DL-WFH-CAM120

CAMERA ACCESSORIES

Camera not included

DL-WFH-CAMBRKT

DL-TRIPOD-FLEX1

DL-WFH-CAM90
DL-WFH-CAM120

USB Webcam w/ Microphone

KEY FEATURES

UVC
• Compliant

USB
• All-in-one USB 2.0 transferring power, data, video, and audio

VIDEO
• Full HD 1920x1080 @ 30 fps
• Field of view: 90° (CAM90) or 120° (CAM120)

AUDIO
• Dual built-in noise-reduction microphone arrays, offering a pickup range up to 3 meters.

MOUNTING
• Multiple mounting options:

  • Included attachment clip bracket
  • 1.4" thread on bottom, allows for endless placement when using a: Tripod (DL-TRIPOD-FLEX1) or wall mount (DL-WFH-CAMBRKT)

OVERVIEW

Liberty's USB webcams are available in two different options with varying field of view degrees: 90° standard-view angle or 120° ultra-wide view angle. Both camera options share the same features and are designed to capture audio and video for conferencing and other applications such as streaming, webinars, distance learning, lecture capture, and personal chatting.

PUT YOUR CATEGORY CABLE TO WORK

Create an Instant Bring Your Own Meeting Space with Liberty AV

The ONE-CABLE solution by Liberty AV combines multiple functions in one cable.

COMPLETELY PLUG-AND-PLAY:
NO additional driver or software required to be recognized by the computer

COMPATIBILITY:
Leading video conferencing platforms such as Microsoft Teams, Google Meet, Zoom, and many others

GET COLLABORATING DONE:
One CAT6 cable solution

PARTS LIST WITHIN THIS CONCEPT:
• Adapter Line: DL-ARDD
• Ultra-Wide USB Cam/Microphone: DL-WFH-CAM120
• Wall Mount Bracket for Camera: DL-WFH-CMBRKT
• HDMI + USB Extender Set: DL-1H1A1U-B
• 1m HDMI Cable   • 2m HDMI Cable
• 2m USB Cable   • 5m+ CAT6 Premade

Conference Table

User A Laptop

DL-ARDD
Universal Adapter Line

DL-1H1A1U-B

Display Wall

(Your Choice)
Display 1

DL-1H1A1U-B

DL-WFH-CAM120
Camera

DL-USB-PTZ10-B

DL-USB-PTZ10-W

CAMERA ACCESSORIES

DL-PTZBRKT-CEILING

DL-USB-PTZ10

10X USB 2.0 PTZ Camera with Wall Mount

KEY FEATURES

UVC
• Compliant
• Supports all Zoom Room features and has been tested to conform with the latest Zoom Certification Program for the highest performance and ultra-reliability. Recalls presets and full PTZ control from the Zoom Room Controller/Tablet

USB
• All-in-one USB 2.0

POWER
• Can be powered over USB 2.0 within short distances. Perfect for when the computer is mounted behind the display. For longer distances, Intelix series extenders can deliver needed power.

VIDEO
• Full HD 1920x1080 @ 30 fps
• Field of view: 8.83° (tele) to 66° (wide)

MOUNTING
• Multiple mounting options:
    • Included attachment clip bracket (Optional ceiling mount)
    • 1.4" thread on bottom, allows for endless placement when using a tripod (DL-TRIPOD-FLEX1) or wall mount (DL-WFH-CAMBRKT)

OVERVIEW

Liberty's USB PTZ10 cameras are available in two different color options: black or white. Both camera options share the same features and are designed to capture video for conferencing and other applications such as streaming, webinars, distance learning, lecture capture, and personal chatting. Easy plug-and-play; no driver is required when using software platforms like Zoom, Teams, YouTube, Facetime, and other messaging applications.

Completely plug-and-play, no additional drivers. Compatible with most video platforms such as Zoom and Teams.

GIVE YOUR AV
BUDGET A BREAK!

Simplifying the USB Camera by Getting You Online in Minutes

Exceptional ONE-CABLE
solution that provides
power, data, and video!

OUTLET OPTIONAL:
USB signal extender provides all the necessary power to the camera. No outlets are required.

FREE UP YOUR BUDGET AND TIME:
No extra cables to pull, and less impactful labor costs incurred.

COMPLETELY PLUG-AND-PLAY:
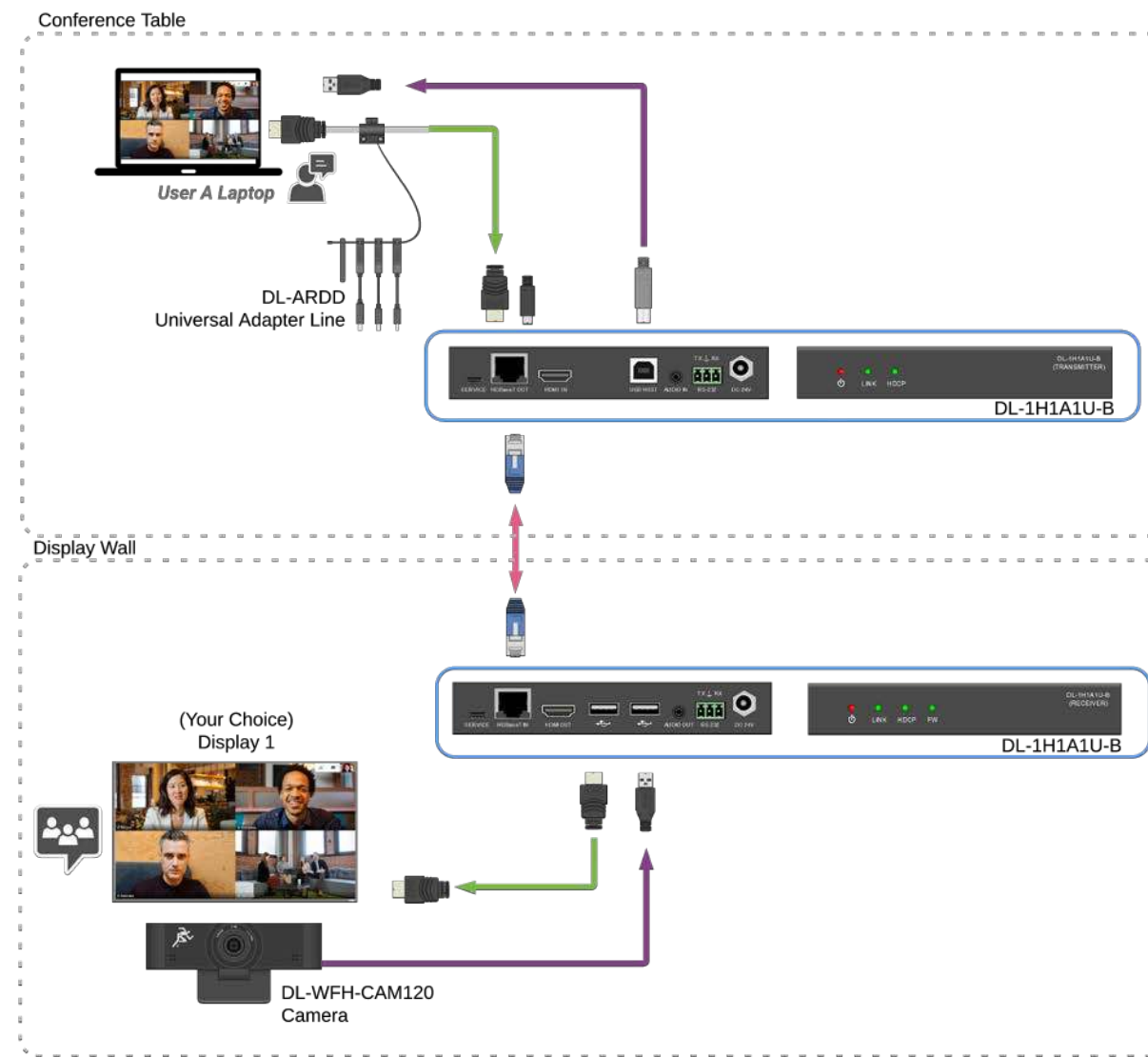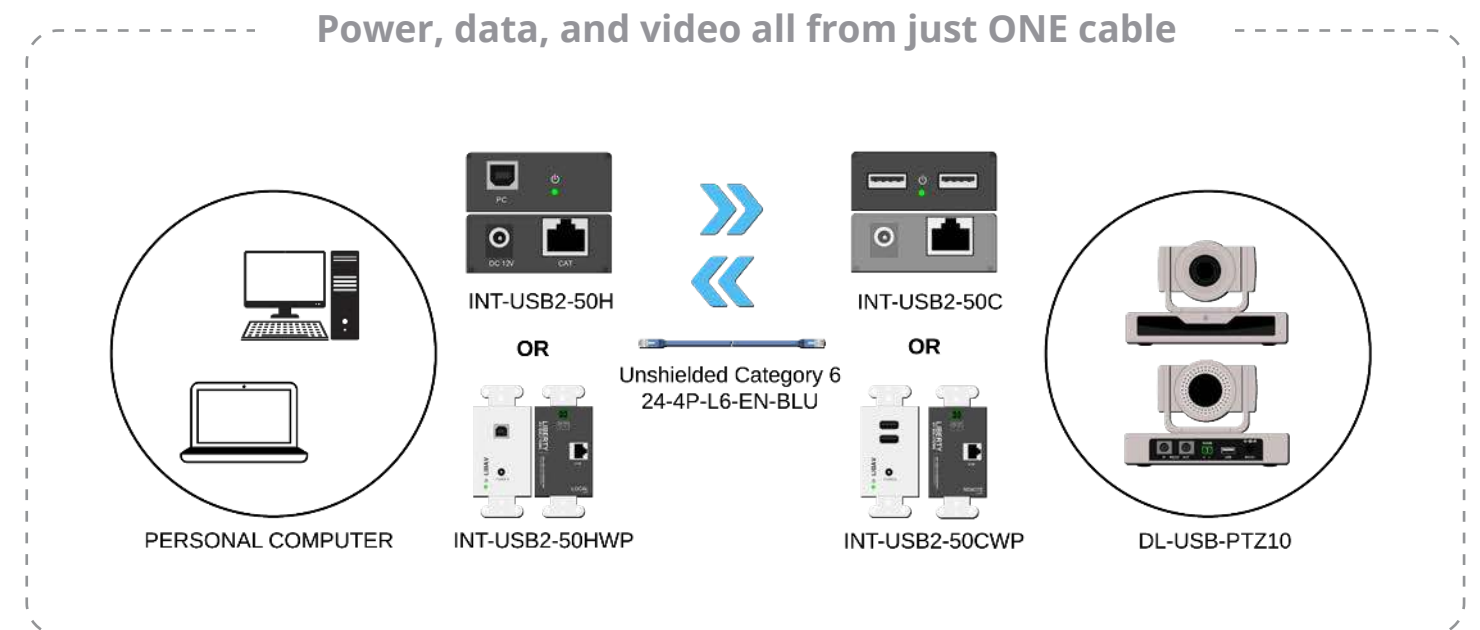No additional driver or software required to be recognized by the computer.

COMPATIBILITY:
Simpatico with leading video conferencing platforms like Microsoft Teams, Google Meet, Zoom, and more.

GET COLLABORATING:
Simplified connections with one CAT6 cable, and get data in real-time with USB isochronous transfers. UVC compliant.

Power, data, and video all from just ONE cable

INT-USB2-50H

OR

INT-USB2-50HWP

Unshielded Category 6
24-4P-L6-EN-BLU

INT-USB2-50C

OR

INT-USB2-50CWP

PERSONAL COMPUTER

DL-USB-PTZ10

*Camera external power supply is optional when using certified Liberty extenders and cable.

zoom   Microsoft Teams   BlueJeans   GoToMeeting   lifesize

RingCentral   StarLeaf   Cisco webex   Google Meet

DL-USB-PTZ20

DL-USB-PTZ20

CAMERA ACCESSORIES

DL-PTZBRKT-CEILING

DL-USB-PTZ20
20X USB 3.0 PTZ Camera with Wall Mount

KEY FEATURES

UVC
• Compliant
• Supports all Zoom Room features and has been tested to conform with the latest Zoom Certification Program for the highest performance and ultra-reliability. Recalls presets and full PTZ control from the Zoom Room Controller/Tablet

USB
• USB 3.0 with the ability to downgrade to USB 2.0

CONTROL
• UVC, IR, RS-232, LAN

VIDEO
• Full HD 1920x1080 @ 60 fps
• Field of view: 6.3° (tele) to 72.5° (wide)
• Simultaneously outputs HDMI, SDI, USB, and LAN

MOUNTING
• Multiple mounting options:

    • Included attachment clip bracket (Optional ceiling mount)
    • 1.4" thread on bottom, allows for endless placement when using a tripod (DL-TRIPOD-FLEX1)

OVERVIEW

Liberty's USB PTZ20 camera is designed to capture video for conferencing and other applications such as streaming, webinars, distance learning, lecture capture, and personal chatting. Easy plug-and-play; no driver is required when using software platforms like Zoom, Teams, YouTube, Facetime, and other messaging applications. Broadcast quality allows this to be a perfect choice for live streaming environments: medical, house of worship, and training spaces.
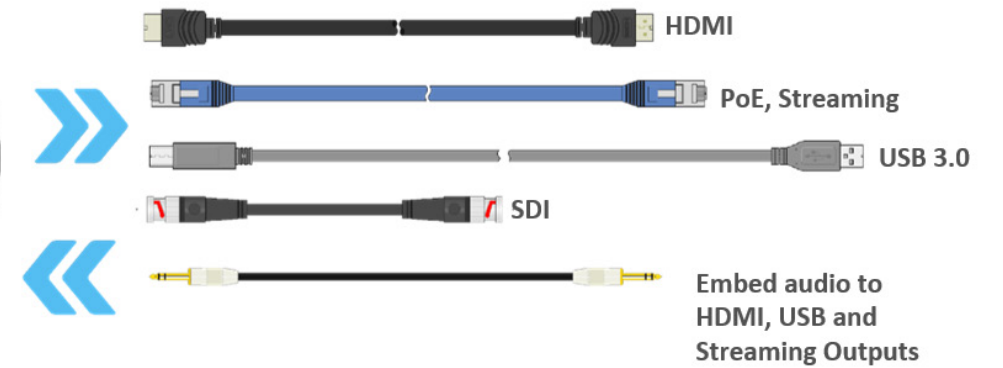
Completely plug-and-play, no additional drivers. Compatible with most video platforms such as Zoom and Teams.

ONE USB CAMERA, SIMULTANEOUS OUTPUTS

Liberty AV combines multiple functions into one camera

DL-USB-PTZ20

HDMI
PoE, Streaming
USB 3.0
SDI
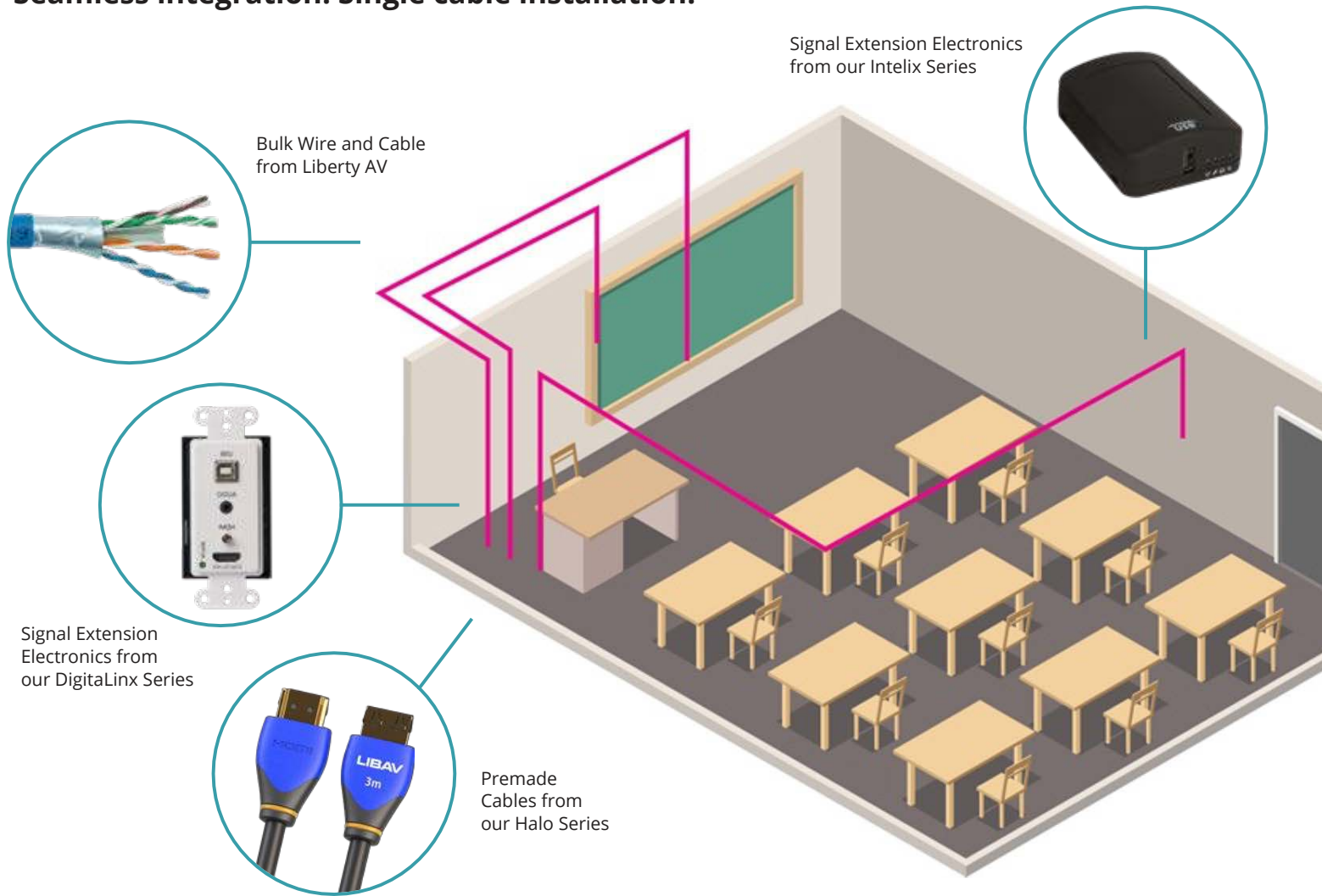Embed audio to HDMI, USB and Streaming Outputs

The PTZ20 is a perfect choice for live-streaming environments: medical, house of worship, and training spaces.

HAVING THE RIGHT SIGNAL EXTENSION TECHNOLOGY MAKES ALL THE DIFFERENCE:

IMPROVING THE WAY YOU USE YOUR TECHNOLOGY

No matter how simple or complex your design may be, Liberty AV can provide you with a performance-based, cost-effective solution for all your structured cabling and low-voltage cable installation needs.

We simplify complex designs and optimize and implement the appropriate solution to enhance your operations, increase productivity, and reduce costs, while ensuring scalability and project performance.

Seamless integration. Single cable installation.

Signal Extension Electronics from our Intelix Series

Bulk Wire and Cable from Liberty AV

Signal Extension Electronics from our DigitaLinx Series

Premade Cables from our Halo Series

GUARANTEE THE OUTCOME
never miss a beat

LATEST TECHNOLOGY
unlocking features that others cannot come close to

EASE OF USE
reduce the complexity, not your standards

LIBERTY
AV SOLUTIONS

A Manufacturing Specialist Dedicated to Quality Product Solutions and Services for World-Class Customers

ELECTRONICS — How the Professionals Switch and Extend Audio Visual Signals

DigitaLinx	AV Signal Extension Matrix Switchers Audio Converters	HDBaseT Switchers Processors	HDMI Distribution Amplifiers AVX
DigiIP	AV over IP Video Walls	Networked AV Multi-View	AV Distribution Dante Audio
Intelix	USB 1.1 Signal Extension	USB 2.0 Signal Extension	USB 3.x Signal Extension
TeamUp+	USB Collaboration Switchers Web Cameras USB Microphone	HDMI Collaboration Switchers Commercial-Grade USB Hubs USB Speaker + Microphone	PTZ cameras BYOD BYOM

BULK WIRE — The Wire and Cable Standard by Which All Others are Compared

Liberty Wire & Cable **RunAV** **Northern** **ComCables**	Residential AV Access Control Control Speaker Fiber Flexible Shield	Commercial AV Low-Voltage Direct Burial Coax Reelex Fire Alarm RF Solutions	Connectors and Adapters Category 5e/6A Structured Telco Coolspool Security SMPTE Video

PREMADE CABLES — Purpose-Built HDMI, USB, Audio, Video, Patch Cords, Power and Network Cables

Intergalactic	Luxury
Nebula	Premier
Kinetic	Supreme
Halo	Installer-Focused
Zero-G	Mega-Flexible
Comet	Economy

MANAGED SERVICES — Outsourcing the Responsibility to Improve Operations and Cut Expenses

CXSupport	Contact and Resolution Center
Ekitting	Kitting and Assembly
Liberty Inventory System (LIS)	Consignment and Perpetual Inventory

SOFTWARE — All-In-One, Easy and Smart

Arranger	Control and Management
CXDetect	AV SaaS Platform
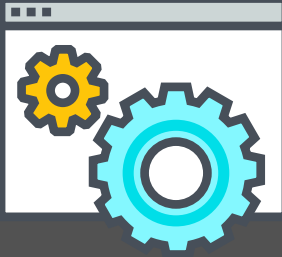
**SERVICE AND
TECHNICAL SUPPORT**

THE LIBERTY
EDGE

**LIBERTY EDGE
WARRANTY**

**WORLD-CLASS
TRAINING**

TALK TO US ABOUT YOUR PROJECT

LIBERTY
AV SOLUTIONS

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